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Mr. Steve Way, On-Scene Coordinator
U.S. EPA, Region VIII
1595 Wynkoop Street, Denver, CO 80202

RE: Red & Bonita - Gold King Project Area Access

Mr. Way,

John Reynolds and Todd Beers will be in the Silverton, Colorado area on Tuesday, 25 August, 2015, and they will be inspecting the Gold King #7 mine portal and mine water outflow in conjunction with operations for the San Juan Corp. Please authorize their entry in to the area for their inspection/evaluation of the project area.

Your cooperation in this matter is greatly appreciated.

Sincerely,



Todd Hennis
San Juan Corp.



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Cement Creek / San Juan Mountains - Bottom Up and Top Down Remediation Ideas with a Modular Water Treatment Concept

Revision: 150901

The visit to Gladstone / Cement Creek with Todd Beers, C.O.O. for Winner Water Services, a subsidiary of the Battelle Group (the largest non-profit R&D organization in the world), went very well. We stayed out of the EPA's way but we were able to see everything we needed to see for Todd to understand the layout of the operations. We bounced some ideas around and this is something we came up with for consideration – I'll take the blame if this is deemed a "Wild Hare Idea".....

A water treatment system can be modularized to various levels with the control head module being able to be coupled with several processing modules to attain various treatment flow rates from about 20 gpm up to and exceeding 4,000 gpm. Costs will depend on the level of water qualities in the remediation of these waters desired by the EPA and the Colorado Division of Water Resources, San Juan County, etc.

The portal of the plugged American Tunnel is located at Gladstone and Gladstone, a former town site, has ample flat areas for an operation base. The area is located outside of possible avalanche paths and is an excellent site for processing/remediation operations. This is the site of the former Sunnyside water treatment facility that was treating ~1,600+ gpm coming from the American Tunnel before the tunnel was plugged between 1996 and 2002. The main American Tunnel was plugged with at least three concrete bulkheads and there are 3 additional bulkheads in the Sunnyside Mine area (Terry Tunnel, Brenneman-Sunnyside B-Level and Brenneman-Sunnyside F-Level).

The American Tunnel is currently producing about 100+ gpm despite the bulkheads. The incoming meteoric waters have filled not only other mine tunnels but these incoming waters have undoubtedly filled up the myriad of faults and fractures that spider web the Bonita Peak to Hurricane Peak region including the east side of the divide, host to the Lake Emma Basin and the Sunnyside Mine area. Current outflows from the Red & Bonita, Gold King #7, Iron Ledge and Mogul are, in part caused by this filling.

These waters filling the mountains and the hydrostatic pressures they produce must be relieved and the portal of the American Tunnel at Gladstone is key to this operation. The American Tunnel baffles should be opened slowly OR a controlled drain hole should be drilled into the area between bulkheads to allow the remediation/water treatment of the stored waters to begin at a water treatment facility located at Gladstone. The Winner Water Services group can construct a modular system that would have perhaps ten (10 or more?) water treatment modules that each could process/treat ~200 gpm for a total capacity of 2,000+ gallons per minute.

The initial processing of the mine water pool would have to handle the estimated 1,600+ gpm of the inflowing natural meteoric waters into the American Tunnel / Sunnyside network plus an additional ~400 gallons per minute to lower the hydrostatic head of the stored mine water pool (possibly additional capacity is necessary to handle the current outflow of the R&B - ~300 gpm & the GKM#7 - ~500 gpm).

As an example, 400 gpm surplus processing capacity could process ~ 24,000 gallons per hour; 576,000 gallons per day; 17,280,000 gallons per month and 207,360,000 gallons per year. Across time, the water backup in the tunnels and faults would lower. As the main Mine Pool waters lower, the outflow of Acid Mine Drainage (AMD) coming out of the Red & Bonita, Gold King #7, Silver Ledge, Mogul, etc. would become less and less until the flows from these mines returned to pre-1996 / pre-American Tunnel bulkhead installation levels (estimated to have been less than 10 gpm at each of the these tunnels – termed “essentially dry” by the EPA).

Once certain flow rate reductions would be reached – probably in about 200 gpm increments – the individual 200 gpm water treatment modules would not be necessary at the Gladstone location. These “surplus” modules could be coupled with an additional control module and installed at the next AMD emitting tunnel for minimal cost since the control module is about 1/10th of the cost of the processing module. When another 200 gpm module wasn’t needed and became “surplus”, again it could be coupled with another control module and another 200 gpm water treatment module could be redeployed to a third location. It is envisioned that a series of 200 gpm water treatment facilities could be installed in other, critical locations in the San Juan Mountains.

The implementation of Top Down remediation would consist of the identification of preferred paths for meteoric waters (rain water, snow melt, etc.) and their infiltration into the tunnel network of the Sunnyside/Brennamen/Gold King/etc. mines. Active water diversion operations could help to re-channel these waters into the natural runoff patterns of the San Juan Mountains without entering the toxification environment of the old tunnels. Current State of the Art Exploration Technologies (Structural Geology, Geophysics, etc.) could be brought to bear to indentify these water filled fractures/pathways and their flows could be diverted. Locating water bearing structures in these hard rock environments is a relatively simple exploration task and the prospects for success are excellent.

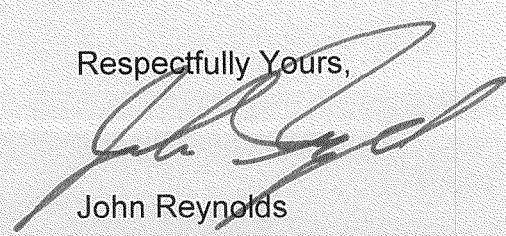
Internal to the tunnels, fault structures intersecting the tunnels that are bringing large volumes of "fresh" water could be bulkheaded and re-routed into pipes that could carry these waters out of the mountain and put these fresh water resources into the natural runoff patterns of the San Juan Mountains without coming into contact with the minerals that create AMD (mainly iron pyrite).

With a moderate amount of success of the Top Down Remediation operation, the eventual water treatment facility located at Gladstone might consist of only two 200 gpm treatment modules and possibly 8 or more, stand alone 200 gpm water treatment modules/facilities would be in place at 8 other locations around the San Juan Mountains.

The overall cost for the bulk of these modules would have been born by the original American Tunnel Remediation operations and the additional locations would have a much reduced CapEx for their installation/remediation. An Industry based consortium with Foundation backing could be a major part of the financial source for this operation significantly reducing the funding needs from the EPA and the State of Colorado. Initial conversation with Industry contacts has been very positive and will be pursued further.

This model could be replicated at a number of other locations across the western U.S.

Respectfully Yours,


John Reynolds

